IN THE U.S. PATENT AND TRADEMARK OFFICE

APPLICANT: Yasuaki NOZAWA et al.

APPLICATION NO.: 10/797,037

FILING DATE: March 11, 2004

FOR: Method and Apparatus for Producing Hydrophobic Silica Fine Powder

ART UNIT: 1795

EXAMINER: HANDAL, KAITY V

D E C L A R A T I O N

Honorable Commissioner of Patents and Trademarks
Washington, D.C. 20231

Sir,

I, Masanobu NISHIMINE, resident of c/o Gunma Complex, Shin-Etsu Chemical Co., Ltd., 13-1, Isobe 2-chome, Annaka-shi, Gunma-ken, Japan do hereby declare that:

1. I was graduated from Chemical Engineering Division, Faculty of Engineering, Shizuoka University, Japan in March, 1983. Since April 1983,

I have been employed by Shin-Etsu Chemical Co., Ltd., the assignee of the above-identified application. I have been engaged in research and development relating to silicas, organosilanes, organopolysiloxanes and chemical plants in the laboratory of the Company.

2. In order to show the feature of the present invention, I conducted the following experiments.

[Experiment]

Comparative Example 2

In the apparatus shown in FIG. 1 of the present application and used in Example 1 of the present specification, the partition which had separated the hydrophobizing section A from the deacidifying section B was removed. In the thus obtained apparatus in which the deacidifying section B was unified with the hydrophobizing section A, silica prepared by the same manner as in Example 1 was subjected to hydrophobizing treatment and deacidifying treatment simultaneously at a nitrogen feed rate of 65 Nm^3/h, a dimethyldichlorosilane feed rate of 2.0 kg/h, and a water feed rate of 0.7 kg/h into fluidization

vessel, and a temperature of 490° C. The flow velocity of silica into the fluidization vessel was 2.1 cm/s. The flow velocity of 2.1 cm/s is the intermediate value of the flow velocity (2.0 cm/sec) in section A and the flow velocity (2.2 cm/sec) in section B in Example 1. The apparatus was operated continuously for a total of 500 hours to produce 14.9 kg/h of the treated silica.

The silica obtained by simultaneously conducting the hydrophobizing treatment and the deacidifying treating in the same fluidization vessel had, on average, a specific surface area of 114 m^2/g, a carbon content of 0.90 wt%, and a pH of 4.6.

The combined amount of silica collected by the cyclone and the bag filter on the discharge side of the diaphram pump during operation was 6.0 kg/hr, representing a fly-out ratio of about 29%.

As is evident from the above results, when the hydrophobizing treatment and the deacidifying treatment were simultaneously conducted, a fly-out ratio would increase remarkably, resulting in a large burden of exhaust gas treatment system (cyclone and bag filter) and an inferior production efficiency.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Dated this 20th day of May , 2008

Masanobu Nishimine